

Comparative Example 5, the flake of Comparative Example 3 was dipped for treatment into calcium hydroxide solution, magnesium hydroxide solution, or sodium acetate solution, which function as thermal stabilizers (page 11, lines 8-12) Thus, heat resistance of Comparative Example 5 showed the level "O". The amendment to claim 8 is based upon line 25 on page 17 of the specification. The introduction of the phrase "to generate free carboxyl groups" into features (ii) and (iii) of claim 1 is based on page 20, lines 22-25. The amendment as to feature (iii) is additionally supported by the phrase "reducing the addition amount of stabilizer (an alkaline metal salt or an alkaline earth metal salt) to the cellulose acetate, or treating a cellulose acetate with acid having the above acid dissociation exponent pKa or a metal salt thereof as described above" at page 20, line 26 through page 21, line 5 of the specification. The remaining claim amendments are formal in nature. No new matter has been introduced. Claims 1-13 and 15-22 are in the case.

Rejections under 35 USC § 103(a)

THE ISHII REFERENCE

Claims 1-13 and 15-22 were rejected under 35 USC § 103(a) as being unpatentable over US 3,816,150 (Ishii). The claims having been amended, this rejection is respectfully traversed.

Ishii describes a process for making modified cellulose acetate which

comprises forming or molding a mixed cellulose ester. The ester is made by esterifying (a) cellulose with (b) acetic acid and (c) polybasic carboxylic acid. The molded product is then treated with a liquid treating agent which consists of an aqueous solution of a water-soluble, polyvalent metal salt. According to Ishii, the mixed ester of cellulose is treated with a divalent or higher metal salt in order to increase the solvent resistance. See Ishii, column 2, lines 37-41.

In order to emphasize an important difference between the presently claimed compositions and compositions disclosed by the Ishii reference, the present claims now expressly refer to free carboxyl group content with respect to all three of the possible "features" of the invention.

Ishii fails to teach or suggest features (i), (ii), or (iii) of the present invention. In more detail, Ishii requires forming a polyvalent metal salt with a polybasic carboxylic acid residue derived from the esterification reaction of a cellulose and a polybasic carboxylic acid in order to crosslink for improving solvent resistance. Ishii thus does not suggest to generate or retain free carboxyl groups binding to the cellulose acetate which is soluble in an organic solvent.

Moreover, unexpected effects are obtained in accordance with the present invention. Thus, Ishii fails to teach or suggest the releaseability, optical characteristics, and spinnability that characterize the composition of the present invention. In particular, Ishii requires the treatment of a carboxyl group with a divalent or higher metal salt for high solvent resistance of the cellulose ester. Ishii certainly does not suggest that such properties could be obtained by

carboxyl group containing cellulose derivative soluble in an organic solvent as required by the present claims.

Clearly, the Ishii reference does not render the invention as presently claimed *prima facie* obvious. Accordingly, the rejection of claims 1-13 and 15-22 under 35 U.S.C. § 103(a) over Ishii alone should be withdrawn.

SEO IN VIEW OF ISHII

Claims 18-21 were rejected under 35 USC § 103(a) as being obvious over US 5,240,665 (Seo) in view of Ishii. This rejection is respectfully traversed.

Seo describes a process for producing cellulose acetate fibers wherein cellulose acetate, acetone, a metal oxide precursor, acid, and water are mixed to form a solution which is then filtered and spun. According to Seo, the cellulose acetate fiber is produced from a cellulose acetate/acetone dope solution by a dry spinning technique. See column 1, lines 31-34. In Seo, the speed for production of a shaped article is increased without aggravating the tensile properties by adding the metal oxide precursor. Column 2, lines 19-24.

Neither Seo nor Ishii, alone or in combination, discloses the organic solvent-soluble cellulose acetates having carboxyl groups required by the present claims. Moreover, with respect to a dope, Seo fails to disclose or suggest any role for a free carboxyl group binding to the cellulose acetate; instead Seo employs a conventional cellulose acetate. Even if Seo is combined with Ishii, the dope obtained would contain a great deal of a polyvalent metal, thus corresponding to

the dope of Comparative Example 1 herein. As reported in lines 2-21 on page 32 of the specification, the releaseability of this dope evaluates as "x" (that is, not smoothly). Thus the Seo-type dope cannot match the qualities of the dope defined by the present claims.

Additionally, Ishii promotes the increase of solvent resistance. In Ishii, the carboxyl groups derived from the polybasic carboxylic acid residue are used for crosslinking with a polyvalent metal in order to form a molded object. The resulting molded object has improved solvent resistance and is insoluble in an organic solvent. Therefore, Ishii fails disclose or suggest a cellulose acetate which is soluble in an organic solvent as well as having a free carboxyl group. Seo also fails to teach this feature of the present invention. Accordingly, the combination of Ishii and Seo do not make the present invention *prima facie* obvious.

Still further, since the cellulose acetate according to the present invention has a free carboxyl group and is soluble in an organic solvent, a dope containing this cellulose acetate exhibits improved spinnability properties. A film obtained by casting the dope also exhibits significantly improved releaseability properties. Neither Ishii nor Seo appreciate these benefits.

Inasmuch as Ishii and Seo individually do not render the presently claimed invention *prima facie* obvious, and the defects are not cured by their combination, the rejection of claims 18-21 under 35 U.S.C. § 103(a) over these two references should be withdrawn.

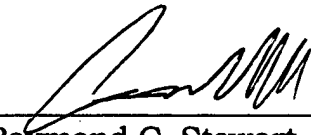
Conclusion

Accordingly, in view of the above amendments and remarks, reconsideration of the rejections and allowance of the claims of the present application are respectfully requested. If the Examiner has any questions concerning this application, he is requested to contact Richard Gallagher (Reg. No. 28,781) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #32808
for Raymond C. Stewart
Reg. No. 21,066
P. O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000


RCS/RG/